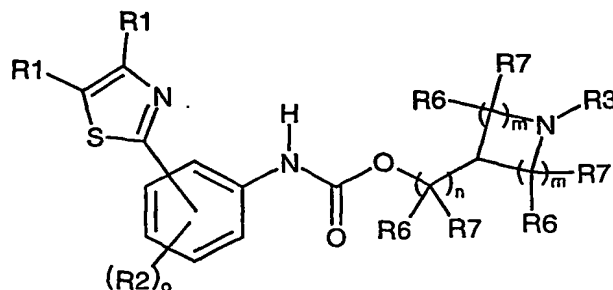


What is Claimed Is:

1. A compound according to the formula:



(I)

wherein:

the thiazole is ortho to the nitrogen;

R1 is selected from the group consisting of halogen, C₁₋₅alkyl, CH₂F, CHF₂;

R2 is selected from the group consisting of hydrogen, C₁₋₅alkyl, aryl, halogen,

hydroxy and alkoxy;

R3 is selected from the group consisting of hydrogen, C₁₋₅alkyl, cycloalkyl, cycloalkyl C₁₋₅ alkyl, C₂₋₄alkenyl, C₂₋₄alkenylaryl; cycloalkyl C₁₋₅ alkyl, and C₁₋₄alkylaryl,

which may be optionally substituted independently by a substituent selected from the group consisting of halogen, nitro, halosubstituted C₁₋₄ alkyl, C₁₋₄ alkyl, amino, mono

or di-C₁₋₄ alkyl substituted amine, OR_a; C(O)R_a, NR_aC(O)OR_a, OC(O)NR₆R₇,

hydroxy, NR₉C(O)R_a, S(O)_mR_a, C(O)NR₆R₇, C(O)OH, C(O)OR_a, S(O)₂NR₆R₇,

and NHS(O)₂R_a;

R₆ and R₇ are selected from the group consisting of hydrogen, and C₁₋₄ alkyl, or R₆

and R₇ together form a 5 to 7 member ring which ring may optionally contain an

additional heteroatom selected from oxygen, nitrogen or sulfur, and which ring may be optionally substituted;

n is 1 or 2; and independently

m is 1 or 2.

2. A compound according to claim 1 wherein:

the thiazole is ortho to the nitrogen;

R1 is selected from the group consisting of halogen, C₁₋₅alkyl, CH₂F, CHF₂;

- R2 is selected from the group consisting of hydrogen, C₁₋₅alkyl, aryl, halogen, hydroxy and alkoxy;
- R3 is selected from the group consisting of hydrogen, C₁₋₅alkyl, cycloalkyl, cycloalkyl C₁₋₅ alkyl, C₂₋₄alkenyl, C₂₋₄alkenylaryl; cycloalkyl C₁₋₅ alkyl, and C₁₋₄alkylaryl,
- 5 which may be optionally substituted independently by a substituent selected from the group consisting of halogen, nitro, halosubstituted C₁₋₄ alkyl, C₁₋₄ alkyl, amino, mono or di-C₁₋₄ alkyl substituted amine, OR_a; C(O)R_a, NR_aC(O)OR_a, OC(O)NR₆R₇, hydroxy, NR₉C(O)R_a, S(O)_mR_a, C(O)NR₆R₇, C(O)OH, C(O)OR_a, S(O)₂NR₆R₇, and NHS(O)₂R_a;
- 10 R₆ and R₇ are selected from the group consisting of hydrogen, and C₁₋₄ alkyl, or R₆ and R₇ together form a 5 to 7 member ring which ring may optionally contain an additional heteroatom selected from oxygen, nitrogen or sulfur, and which ring may be optionally substituted;
- n is 1 or 2; and independently
- 15 m is 1 or 2.
3. A compound according to claim 2 selected from the group consisting of:
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Ethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(1,1-Difluoro-methyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl
- 20 ester;
- (2-Thiazol-2-yl-phenyl)-carbamic acid piperidin-4-ylmethyl ester; compound with 2,2,2-trifluoro-acetic acid;
- [2-(4-Propyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6R)-2,6-dimethyl-piperidin-4-
- 25 ylmethyl ester;
- [2-(4-Isopropyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-tert-Butyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Bromo-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Chloro-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- 30 [2-(4-Isobutyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;

- [2-(4-Cyclopropylmethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Cyclopropyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Cyclobutyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- 5 [2-(4-Trifluoromethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Fluoromethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(1,1-Difluoro-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(2-Fluoro-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- 10 {2-[4-(2,2-Difluoro-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Methoxymethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Hydroxymethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(1-Hydroxy-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- 15 {2-[4-((R)-1-Hydroxy-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(2-Hydroxy-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- 20 [2-(4-Amino-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [5-Fluoro-2-(4-methyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Ethyl-thiazol-2-yl)-4-hydroxy-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6S)-2,6-dimethyl-piperidin-4-ylmethyl ester;
- 25 [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6S)-2,6-dimethyl-piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6S)-1-benzyl-2,6-dimethyl-piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6S)-1-benzyl-2,6-dimethyl-piperidin-4-ylmethyl ester;
- 30 [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6R)-2,6-dimethyl-piperidin-4-ylmethyl ester;

- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6R)-2,6-dimethyl-piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid (2R,6R)-1-benzyl-2,6-dimethyl-piperidin-4-ylmethyl ester;
- 5 [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid 4-fluoro-piperidin-4-ylmethyl ester;
- [2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid 1-butyl-piperidin-4-ylmethyl ester;
- [2-(4-Methyl-5-methylcarbamoyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(5-Methyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- 10 [2-(4,5-Dimethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Acetyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- {2-[4-(2-Benzoyloxy-ethyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Methylcarbamoyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- 15 2-[2-(Piperidin-4-ylmethoxycarbonylamino)-phenyl]-thiazole-4-carboxylic acid ethyl ester;
- [2-(4-Dimethylaminomethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Phenyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- 20 [2-(4-Thiophen-3-yl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- [2-(4-Ethyl-thiazol-2-yl)-4-fluoro-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
- tert-Butyl 4-[[[4-(4,4,5,5-tetramethyl-[1,3,2]dioxaborolan-2-yl)phenyl]amino]carbonyl]oxy]methyl]piperidine-1-carboxylate;
- tert-Butyl 4-[[[3-(4,4,5,5-tetramethyl-[1,3,2]dioxaborolan-2-yl)phenyl]amino]carbonyl]oxy]methyl]piperidine-1-carboxylate ;
- 25 tert-Butyl 4-[[[4-(4-chloro-1,3-thiazol-2-yl)phenyl]amino]carbonyl]oxy]methyl]piperidine-1-carboxylate;
- tert-Butyl 4-[[[3-(4-chloro-1,3-thiazol-2-yl)phenyl]amino]carbonyl]oxy]methyl]piperidine-1-carboxylate;
- 30 Piperidin-4-ylmethyl 4-(4-chloro-1,3-thiazol-2-yl)phenylcarbamate hydrochloride;
- Piperidin-4-ylmethyl 3-(4-chloro-1,3-thiazol-2-yl)phenylcarbamate hydrochloride ;

- 1-cyclohexylmethyl-piperidin-4-ylmethyl 4-(4-chloro-1,3-thiazol-2-yl)phenylcarbamate;
1-cyclohexylmethyl-piperidin-4-ylmethyl 3-(4-chloro-1,3-thiazol-2-yl)phenylcarbamate;
- 5 4-[4-(4-Chloro-thiazol-2-yl)-phenylcarbamoyloxymethyl]-1-cyclohexylmethyl-1-methyl-piperidinium iodide;
4-[3-(4-Chloro-thiazol-2-yl)-phenylcarbamoyloxymethyl]-1-cyclohexylmethyl-1-methyl-piperidinium iodide;
4-[4-(4-Chloro-thiazol-2-yl)-phenylcarbamoyloxymethyl]-1,1-dimethyl-piperidinium;
- 10 and
4-[3-(4-Chloro-thiazol-2-yl)-phenylcarbamoyloxymethyl]-1,1-dimethyl-piperidinium;
or a pharmaceutically acceptable salt thereof.
4. A method according to claim 3 wherein the compound is selected from the group consisting of:
- 15 [2-(4-Bromo-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
[2-(4-Chloro-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
[2-(4-Methyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester;
{2-[4-(1,1-Difluoro-methyl)-thiazol-2-yl]-phenyl}-carbamic acid piperidin-4-ylmethyl ester; and
- 20 [2-(4-Fluoromethyl-thiazol-2-yl)-phenyl]-carbamic acid piperidin-4-ylmethyl ester.
5. A method of antagonizing the M₃ muscarinic acetylcholine receptor by administering to a subject in need thereof a safe and effective amount of a compound according to claim 1.
6. A method of treating a disease or disorder selected from the group consisting of
- 25 chronic obstructive lung disease, chronic bronchitis, asthma, chronic respiratory obstruction, pulmonary fibrosis, pulmonary emphysema, and allergic rhinitis, irritable bowel syndrome, spasmodic colitis, gastroduodenal ulcers, gastrointestinal convulsions or hyperanakinesia, diverticulitis, pain accompanying spasms of gastrointestinal smooth musculature; urinary-tract disorders accompanying micturition disorders, neurogenic
- 30 pollakisuria, neurogenic bladder, nocturnal enuresis, psychosomatic bladder, incontinence associated with bladder spasms or chronic cystitis, urinary urgency or pollakiuria, and motion sickness.

7. A pharmaceutical formulation comprising an active according to claim 1 and a suitable carrier.
8. A container containing a pharmaceutical formulation according to claim 1 fitted with a metering valve.
- 5 9. A device adapted for intranasal delivery of a pharmaceutical formulation comprising a container according to claim 8.